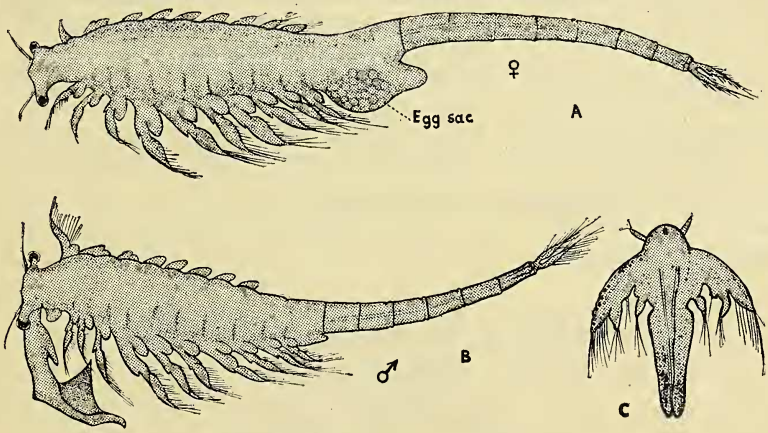
16. OCCURRENCE OF THE BRINE SHRIMP *ARTEMIA* SP. IN BOMBAY

(*With a text figure*)

The Brine Shrimp, *Artemia*, is well-known to students of biology for its adaptability to highly saline media and the phenomenon of parthenogenesis, which it exhibits. Parthenogenesis, put into plain language means development of an individual from an egg without the intervention of the male element. The occurrence of brine shrimps in India was not, however, known till May 6th, 1952, when a large number of fully developed *Artemia* were collected from salt pans at Vadala, on the outskirts of Bombay. Reference to literature indicates that the only area close to India, from where the Brine Shrimp is recorded is the Tibetan region, where Bond (1934)[1], collected a few specimens at Tso-Kar during the Yale University expedition.

Apart from the biological significance attached to the discovery at Vadala, the occurrence of brine shrimps in Bombay is of considerable practical significance to aquarists. Eggs of Brine Shrimp are a boon in the raising of tiny fry. The eggs, packed in tubes, are at present imported by aquarists from foreign countries for feeding their pets. When baby fish are expected to hatch, Brine Shrimp eggs are put into slightly saline water. In about 30 hours tiny larvae are ready as food for baby fishes. Collection of Brine Shrimp eggs and the despatch to aquarists in different parts of the world is a thriving trade in California. Occurrence of this crustacean in our waters should open up a new vista to our aquarists, who can collect both adults and eggs locally. Being tenacious, the adult shrimps can also be kept for a long time for feeding larger aquarium fish.



A – Female *Artemia* : × 22;
B – Male *Artemia* : × 22;
C – Early larva of *Artemia* (Nauplius) : × 200.

[1] Bond, R. M. (1934) : *Mem. Conn. Acad. Arts & Sci.*, Vol. x, Article 5 (Yale Univ. Exped.).

The Indian *Artemia* are tiny creatures half an inch in total length and cherry-red in colour when full grown. They swim upside down, as if with back strokes, like typical Phyllopods. Younger forms are pale whitish in colour. There is a pronounced sexual dimorphism, the male (Fig. B) having well developed claspers and the female possessing prominent ovisacs (Fig. A). Besides, the males are smaller than the females and are far fewer in numbers; about 98% of the population being females only.

Preliminary observations indicate that the Indian species of *Artemia*, like its foreign congener is very specialised, thriving normally in salinity of over 160°/oo, the salinity of normal sea water being only 35°/oo. Its osmo-regulatory mechanism is also very wonderful as specimens placed directly from such highly concentrated saline water into fresh tap water (O salinity) lived for 3 days without any apparent discomfort.

Eggs of Brine Shrimp generally remain dormant for more than a year and hatch out when the optimum salinity is reached. In dry condition they are known to remain viable for 12 years. Detailed observations on the viability of eggs of the Indian Brine Shrimp, its life cycle and development will be studied later, but initial observations show that these eggs float in concentrated water of salt pans and wash up on the sides. Whether they hatch out immediately when water of lower salinity is taken into the pans in the following fortnight during the normal process of salt manufacture, has not yet been established. Experiments in the laboratory show, however, that some of the eggs hatch out on the second day in water of salinity of 65°/oo. Eggs which were yet within the egg pouches (ovisacs) were viable, for when a few mature females were crushed and put into slightly saline water the eggs from the ovisacs hatched on the third day. After hatching, the embryo remained suspended from the egg capsule, encased in the embryonic membrane for some time before it actually began to swim about. The newly hatched larva passes through the typical Nauplius (Fig. C) and Metanauplius stages.

Further observations on the systematics and bionomics of these shrimps are in progress.

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17. OCCURRENCE OF *NEPHILA MALABARENSIS* IN BOMBAY

(*With a text figure*)

Recently I secured an interesting Argyopid spider from an expansive orb-web that lay stretched between the tiled roof of Matunga Road Booking Station and a nearby tree (*Pithecolobium saman*). Attracted by the immense size of the web which was about 6 sq. ft. I searched for the inmate for a number of days without success.